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ABSTRACT

Children's early utterances were studied to determine whether there are developmental changes in the content, context, frequency, and form of their speech and the degree to which the changes correspond to changes in Piagetian cognitive stage. Twenty children were studied; six were 10 or 11 months old, and the remaining 14 were distributed evenly in age from 16 to 25 months. One or two sessions were conducted in the child's home with the mothers present. Cognitive assessment was carried out through measures of object permanency, mean-ends, and play as described in Uzgiris and Hunt's (1975) and Lezine's (1973) procedures. The child's speech during play with the mother was noted, along with context, and analyzed for presence or absence of the following categories: communication games, performative vocalization, use of words, action, recurrence, speech to speech, comprehension for absent objects, wh-questions locative, and two-word combinations. Results indicate a general correspondence between linguistic and cognitive periods but less evidence was found to support the claim that a given stage is necessary to the occurrence of a particular milestone. The sequential changes in linguistic content appear to be preceded by similar sequential changes in knowledge of the world. Meanings expressed by the child verbally are meanings constructed through action in the previous sensorimotor stage, or earlier in the same stage. It appears that the developmental level of the child may serve to predict the content of the child's initial utterances, but only indirectly. (SW)

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FIRST WORDS: THEIR ORIGIN IN ACTION

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Introduction

In 1974 in this forum we heard David Ingram (1976) summarize the existing evidence, much of it supplied by people present today, for developmental changes in the content, context, frequency and form of children's early utterances. Like many others in this room we went away to test further the existence of these developmental changes and the degree to which they correspond to changes in Piagetian cognitive stage.

Pilot Study

Method

Experimenters

The testers in this pilot study were 15 graduate students enrolled in an intensive 4-week summer course in informal language and cognitive assessment at the University of Wisconsin. Most were teachers or clinicians from a variety of disciplines (Communicative Disorders, Special Education, Deaf Education, Remedial Reading, elementary and preschool teaching) returning for continuing education; all were experienced in working with children.

Subjects

Each student was asked to find and assess one child below the age of a year; one child between 1 and 2, and one child between 2 and 4. Neighbors were the most frequent source of subjects. The 20 children included in this report are those between 10 and 25 months of age for whom adequate data were obtained. (3 children were excluded for failure to obtain sufficient information, as well as one twin). Six children were 10 or 11 months old; the remaining 14 were distributed evenly in age from 16 to 25 months.

Procedures

One or two sessions in the child's home with the mothers present were held. Each student submitted a report describing the procedures used and the response observed which was scored by the authors for the categories in Table 1.

Cognitive assessment was carried out through measures of object permanency, means-ends, and play as described in Uzgiris and Hunt's (1975) and Lezine's (1973) procedures. In object permanency testing, the child was required to pass three-stage invisible displacement to be scored sensorimotor stage 5; and

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both one visible displacement and one partial screening to be scored sensorimotor stage 4. Each response was validated three times during the testing session.

In evaluating means-end behaviors, the child was required to find the mechanisms for a novel mechanical object without modeling to be scored sensori-motor stage 6; to use a string to retrieve an object out of reach without modeling to be scored stage 5; and to obtain an object through pulling its support (a blanket or pillow) to be scored stage 4. Again each response was validated three times during the testing sessions.

Play with objects was scored according to the developmental sequences outlined by Lezine (1973). Simple actions applied to a variety of objects in rapid succession (rubbing, shaking, hitting, scratching, turning over, releasing) were scored stage 4. The addition of some conventional uses for objects, not restricted to conventional interactions, was scored stage 5 (for example, using a hairbrush to brush self, floor, doll's hair and toes). Conventional functions demonstrated in conventional ways--that is, conventional actions upon the conventional objects and normal spatial relationships between objects--were scored stage 6. Early forms of pretend play were also scored stage 6. If the child used an object or word to stand for a different, absent object in play, (Lezine's stage 4c) the behavior was scored early preoperational.

The child's speech during play with the mother was noted, along with context, and analyzed for presence or absence of the categories indicated in Table 1. The testers had received training in observational techniques for scoring these categories. Communication games were scored as present if the mother played any repetitive game with the child which included talk: Peek-aboo, I'm gonna get you, patticake, This little piggie, for example. The apparent communicative functions of the younger children's vocalizations were noted as rejection, request, comment, or question, as well as whether or not they were using words. Testers were not asked to record accompanying pointing behavior, so the performative category may not be identical to Bates' (1976). Words which were used to request or comment explicitly on a change of state were scored as action, including locatives used to request action. Recurrence as a request for action--or a comment upon relation between objects--was scored as a separate category, following Bloom's use (1973). Speech-to-speech was defined as a non-imitative, pragmatically appropriate, temporally contiguous spoken response to speech. In practice, answers to yes-no, what's this, or What does the X-Say? questions were the behaviors leading to yes in this category. If instances occurred in which the mother requested the child to get an object not out in view, these were scored for the child's compliance. If the child used WH-questions, these were noted. If he used locatives other than where questions to talk about location, these were scored. Finally, the occurrence of any two word utterances was noted.

RESULTS AND DISCUSSION

The data for individual children is presented in Table 1. Tables 2 and 3 summarize the findings. Two subjects passed the cognitive tasks only at the stage 4 level; neither of these used words, though one seemed to be using

Table 1

Cognitive and Language Findings for Each Child (n=20) In Pilot Study

Child	Age (months)	Cognitive Stage	Communication games?	performative vocalization?	Use of words?	Action?	Recurrence?	Speech to Speech?	Comprehension for absent objects?	Wh-questions Used?	Locative?	Two-word Combinations?	Other Information
1	10;1	SM IV	yes	no	no								
2	11;0	SM IV	yes	rejection request	no								
3	10;1	SM V	yes	rejection	no								Mother reports 3 words
4	10;4	SM V	yes	comment	no	NOT APPLICABLE							
5	10;4	SM V	yes	request comment	no								4 words understood
6	11;1	SM V	yes	rejection request comment	no								
7	16;0	SM V			yes	yes	no	no	no	no	no	no	6 words reported
8	16;2	SM V			yes	no	no	no	no	no	no	no	
9	18;1	SM V			yes	yes	no	yes	?	what	no	yes	
10	17;2	SM VI			yes	yes	yes	yes	yes	no	no	no	18 words reported some SM tasks V
11	18;2	SM VI	NOT TALLIED		yes	no	no	no	yes	no	no	no	Some SM tasks Stage V
12	19	SM VI			yes	no	yes	yes	yes	what where	no	yes (1)	14 words reported
13	20;3	SM VI			yes	yes	yes	yes	yes	(yes)	yes	yes	
14	21	SM VI			yes	yes	yes	yes	yes	where	yes	yes	
15	22	SM VI			yes	yes	yes	yes	yes	what where what-do	yes	no	
16	23	SM VI			yes	yes	yes	yes	yes	where	yes	yes	
17	25	SM VI			yes	yes	yes	yes	yes	(yes)	yes	yes	MLU=1.4
18	22	Early Preop			yes	yes	yes	yes	yes	what where whose	yes	yes (many)	structures at least late Stage I
19	23	Early Preop			yes	yes	yes	yes	yes	where what	yes	yes (many)	Structures at least late Stage I
20	24	Early Preop			yes	yes	yes	yes	yes	(yes)	yes	yes (many)	MLU=2.1

vocalization to reject and request objects. Seven subjects passed the cognitive tasks only at the stage 4 and 5 level. The younger stage 5 children used stereotyped vocalizations to reject, request, and comment, but not to question. Nor were words observed during the session, although one mother reported words. The older stage five children used words, but not to talk about recurrence or location. Nor did they indicate comprehension of words for absent objects.

Eight children were categorized as sensorimotor stage 6, including 6 who performed at stage 6 on all the tasks. All these children used words, went to look for objects not present, and demonstrated the presence of at least one of Ingram's (1976) period II categories; indeed, the six who were clearly stage six demonstrated most of these categories. All categories were observed for three early preoperational children, as well as frequent use of two-word utterances.

Word use by the children in stages V and VI is summarized in Table 3. Given the particular--and stringent--criteria for cognitive stage which were used here, there is good evidence for the general correspondence between linguistic and cognitive periods which investigators have proposed, although less evidence to support a claim that a given stage is necessary to the occurrence of a particular milestone.

Now that we can confirm some correspondence between linguistic and cognitive changes through these data, we suggest that some of the linguistic changes observed in our data and others reported in the literature can be accounted for by a prior developmental sequence in the child's awareness of the world: That the meanings expressed by the child verbally are meanings constructed through action in the previous sensori motor stage, or earlier in the same stage. In short, that new forms express old functions. The first words are about cognitively old content. These sequential changes in linguistic content appear to be preceded, by stages or months, by similar sequential changes in knowledge of the world, as will be briefly detailed in the remainder of this paper.

The earliest utterances reported in recorded accounts of children's first words may be categorized as those relating to events that are immediately perceptually present to the child (Bates, 1976; Bloom, 1973; Corrigan, 1976; Greenfield and Smith, 1976; Harding and Golingkoff, 1977; Ingram, 1976; Lezine, 1973; Nelson, 1973; and Raph and Nicholich, 1975. These stage 5 utterances include:

1. commenting on the appearance of objects the child notices;

2. requesting or rejecting a present object or person, although often without directly labelling the person or object.

3. greetings and other well established routines played in familiar situations.

Table 2

Summary of Cognitive and Language Findings (n=20) In Pilot Study

Cognitive Stage	No. Ss	Mean CA	Range CA	All Passed	All Failed
IV	2		10;1-11;0	• Communication Games	• Use of words
V	7	13;2	10;1-18;1	• Performative vocalizations or • Use of Words	• Recurrence • Location • Comprehension of a word for absent object
VI	8	20;3	17;2-25	• Use of Words • Comprehension of a word for absent object • At least 1 other transitional item	• No Items
Early Preop	3	23	22-24	• All Items	• No Items

Table 3
Per Cent of Children in Stage V and VI Showing Each Transitional Characteristic

Word Uses	Stage V (n=7)	Stage VI (n=8)
Use of Words	43%	100 %
Action	28%	75%
Recurrence	0%	88%
Speech to Speech	14%	88%
Comp. Absent Objects	0%	100%
WH questions	14%	75%
Locative	0%	62%
Two-word Combinations	14%	62%

What these uses have in common are the following.

First, they are characteristic of other stage 5 behavior in that they constitute novel means to familiar ends, as Bates (1976) has pointed out.

Second, they depend on the child's participation in an ongoing situation in which all the major components of the referent situation are immediately present--He does not talk about objects or people not immediately visible. Third, no relations among those components are implied by the child's words: his stage 5 words express the cognitive content of substage 4, in which the child recognized the existence of objects distinct from himself, but did not recognize relations among multiple objects or put objects to conventional uses.

In the beginning of substage 6, the child's utterances are about agents, actions and objects of action (Greenfield and Smith, 1976), as the child expresses relationships that were present in the action schemes of the substage V child. These Stage 5 actions and stage 6 meanings include:

1. seeing others as agents of actions

2. seeing himself as an object of action

3. searching for a familiar object in a usual location

4. following actions and objects sequentially

5. recognizing the consequences of actions

There are some meanings which Greenfield and Smith's (1976) and Bloom's (1973) data indicate to be later-appearing than agent, action, and object of action. These meanings include relationships between objects such as location, possession, certain uses of recurrence (one object as another instance of a class), and nonexistence. Why should these uses emerge later in Stage VI?

By our argument, there should be cognitive achievements at the beginning of stage 6 which would lead to the later verbal expression of those achievements--and there turn out to be two such Stage 6 cognitive landmarks which can be linked with the meanings in question. The first is the beginning of a representational system. The child thinks before he acts. He remembers past events and objects. This new acquisition would explain the later emergence of categories such as non-existence and use of words for absent objects, as well as the beginning stage 6 ability to understand words for absent objects. Secondly, it is at the beginning of stage 6 that the child begins to classify (Lezine, 1973), often functionally, objects that go together. This would predict the later occurrence in Stage 6 or early preoperational of recurrence as a comment on the similarity between objects as well as the later occurrence of utterances indicating possession--noting that certain objects belong to mother, others to daddy, for example.

Thus it would appear that the developmental level of the child may serve to predict the content of the child's initial utterances, but only indirectly.

The child first demonstrates an awareness that is later expressed through words. Old meanings, not new ones, take on a new, verbal form. The concept of the recapitulation of old ideas in new forms has been expressed by Piaget (1972), Bloom (1970), Werner and Kaplan (1952) and Slobin (1973). This proves to be an especially fruitful perspective to take in viewing the interplay between the development of cognitive and linguistic competence.

Bates, G. Language and context: The acquisition of pragmatics. New York: Academic Press, 1976.

Bloom, L. Language development: Form and function in emerging grammars. Cambridge, Mass.: MIT Press, 1970.

Bloom, L. One word at a time: The use of single word utterances before syntax. The Hague: Mouton, 1973.

Corrigan, R. The relationship between object permanence and language development: How much and how strong? Paper presented at Stanford Child Language Research Forum, Stanford University, April, 1976.

Greenfield, P. and Smith, J. The structure of communication in early language development. New York: Academic Press, 1976.

Harding, C. and Golinghoff, R. The relationship between early language and cognitive development. Paper presented at the Society for Research in Child Development, March, 1977.

Ingram, D. Sensorimotor intelligence and language development. In A. Lock (Ed) Action, gesture and symbol: The emergence of language. New York: Academic Press, 1976.

Lezine, I. The transition from sensorimotor to earliest symbolic function in early development. Early Development, 1973, 51, 221-228.

Nelson, K. Structure and strategy in learning to talk. Monograph of the Society for Research in Child Development No. 149, Chicago: University of Chicago Press, 1973.

Piaget, J. Genetic Epistomology, New York: Norton, 1972.

Raph, J. and Nicholich, L. Symbolic Play and the Development of Language. Paper presented at the American Psychological Association Meetings, August, 1975.

Slobin, D. Cognitive Prerequisites for the Development of Grammar. In C. Ferguson and D. Slobin (Eds), Studies in Child Language Development. New York: Holt, Rinehart, and Winston, 1973.

Uzgiris, I. and Hunt, J. McV. Assessment in Infancy. Urbana, Ill.: University of Illinois Press, 1975.

Werner, H. and Kaplan, B. Symbol Formation, New York: Wiley, 1963.